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PUBLIC PERCEPTIONS OF ANOREXIA NERVOSA

by

Katherine Karas

A Thesis Submitted in

Partial Fulfillment of the

Requirements for the Degree of

Master of Science

in Psychology

at

The University of Wisconsin-Milwaukee

December 2014

ABSTRACT
PUBLIC PERCEPTIONS OF ANOREXIA NERVOSA

by

Katherine Karas

The University of Wisconsin-Milwaukee, 2014
Under the Supervision of Professor W. Hobart Davies

Despite the severe impact of anorexia nervosa if left untreated, it has been estimated that only roughly 10% of those meeting diagnostic criteria for anorexia nervosa ever seek out effective treatment. The most cited potential barrier to treatment seeking for general mental health issues is an individual's fear of stigmatization (Corrigan, 2004), but this has never having been examined specifically for anorexia nervosa. In order to further the understanding as to how stigmatization may affect treatment seeking for individuals with anorexia nervosa, it is first necessary to establish the currently held stereotypes for anorexia nervosa. It is the goal of the present study to ascertain currently held stereotypes for anorexia nervosa through qualitatively and quantitatively based responses with an emerging adult population; and develop and pilot a measure that can be used to assess these perceptions efficiently. Qualitative responses from 621 emerging adults suggested that they described individuals with anorexia in with responses that could be coded into the following factors: Physical Characteristics, Self-esteem/Self-image, Depression, Behavior, Anxiety, Determined/Control, Interpersonal, Global, Unspecified Mental Health, Mood Instability, and Other. The most common qualitative responses were compiled into a 30-item questionnaire that was administered to 777 emerging adults from different samples. Exploratory factor analysis revealed a seven-factor solution; five of these factors demonstrated adequate internal consistency. These factors, listed in decreasing order by overall mean score were: Psychopathology, Determination, Affluent Background, Positive Characteristics, and Global Negative. Taken together, results from these two studies suggest that emerging adults have a well-rounded knowledge of the nature of anorexia nervosa as a disorder, and overall report low levels of stereotypical thoughts.

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Public Perceptions of Anorexia Nervosa

Eating disorders are some of the most prevalent and life-threatening psychiatric conditions, affecting nearly 20 million women and 10 million men at some point in their lives (Wade, Keski-Rahkonen, & Hudson, 2011). Anorexia nervosa is the third most common chronic mental health illness among adolescents, which is especially worrisome given that those with untreated anorexia nervosa have a mortality rate approximately 18 times higher than their peers if they do not seek adequate treatment. (Shepphird, 2009; Steinhausen, 2009) Despite the prevalence and substantial health risks if left untreated, only about 13% of those eligible to seek treatment for an eating disorder ever do so (Merikangas et al., 2011).

Previous research has shown that when seeking treatment for mental illness more broadly speaking, fear of stigmatization is the most cited reason why individuals choose to not seek treatment (Corrigan, 2004). Additionally, a 2007 article by Hepworth and Paxton examining barriers to treatment seeking in individuals with binge eating disorder and bulimia nervosa, identified self-stigma as a contributing factor to avoiding treatment. However, there is still very limited research examining what may be specific barriers to treatment seeking for individuals with eating disorders, particularly with regards to an examination of stigma towards eating disorders. In order to assess how stigma may impede treatment seeking behaviors, first there must be a current examination of the stereotypes regarding eating disorders, as stereotypes are a central factor in the construction of stigma. (Link & Phelan, 2001) Anorexia nervosa was selected for the purposes of this study as it is the most fatal of the eating disorders and is well known to the public.

This proposal will first review diagnostic criteria for anorexia nervosa and the subsequent health effects. Next, empirically based treatments for anorexia nervosa will be examined, as well as a review of barriers to treatment seeking practices. There will then be a review of the stigma model as a barrier to treatment seeking practices for mental illness. This proposal will then review the existing literature on the stigmatization of eating disorders. Finally, the relationship between stigma and barriers to treatment seeking, examined through the means of stereotype identification, will be defined and the methods proposed to complete the study will be outlined.

Anorexia Nervosa

The essential features of anorexia nervosa, as laid out in the DSM-5, include that an individual refuses to maintain a minimally normal body weight, is intensely afraid of gaining weight, and exhibits a significant disturbance in the perception of the shape or size of his or her body. (American Psychiatric Association, *Diagnostic and statistical manual of mental disorders* (5th ed.), 2013). There are no significant differences in the diagnostic criteria in the DSM-IV-TR excepting that it also included a criterion that postmenarcheal females with the disorder are amenorrheic (American Psychiatric Association, *Diagnostic and statistical manual of mental disorders* (4th ed., text rev.), 2000). The prevalence of anorexia in adolescent or early adult women is 1%, and the prevalence in males is between .05% and .1%, with average age of onset being approximately 13 years old (Hoek, 2006).

Anorexia nervosa is highly correlated with several severe health consequences induced when necessary nutritional standards are not met. Individuals living with anorexia commonly experience anemia, leukopenia, amenorrhea, dehydration,

hypotension, and bradycardia. In cases of severe anorexia nervosa individuals may also present with osteopenia, osteoporosis, cardiac arrhythmias, slowed gastric motility, renal insufficiency, hair loss, and the presence of a fine pattern of hair (lanugo) on the face, neck, and trunk. If individuals are also engaging in compensatory purging behaviors in the course of anorexia nervosa, they may also show signs of electrolyte imbalance. (Attia & Walsh, 2009)

Approximately 10-20% of those individuals diagnosed with anorexia nervosa will later die due to physical complications related to the disorder or from suicide, identifying anorexia nervosa as the psychiatric disorder with the highest mortality rate. Those with anorexia are also 40 times more likely to commit suicide than the general public (Pret, Rocchi, Sisti, Camboni, & Miotto, 2011). Anorexia nervosa also has high comorbidity with other mental illnesses, the two most common being depression and anxiety, but also obsessive-compulsive disorder, personality disorder, and substance use disorders (Löwe et al., 2001; Agras et al., 2002). Approximately half of those with an eating disorder will also meet criteria for major depressive disorder (Sullivan, 1995). Considering the potential impact of anorexia on overall health, it is essential to explore means of mitigating aforementioned risks through effective treatment.

Evidence-Based Treatment for Anorexia Nervosa

Research on what is the most effective line of treatment for anorexia nervosa is complicated and there is not yet a clear consensus. In 2002, the National Institutes of Health held a workshop focused on overcoming barriers to treatment related research for anorexia nervosa. The workshop highlighted several reasons why it is difficult to make a case for a specific evidence-based treatment (EBT). (Agras et al., 2002) One identified

reason being that EBTs are based predominantly on randomized control trials of which there are very few for this population (Westen & Morrison, 2001). At the time of the 2002 workshop there were fewer than “a dozen published controlled outpatient treatment trials” (Agras et al., 2002, p. 514). However, there have been a few studies, which suggest that both family based therapy for adolescents and Cognitive Behavioral Therapy (CBT) for adults are promising interventions. (Agras et al., 2002; McIntosh et al., 2005; Eisler et al., 2000; Lock, Couturier, & Agras, 2006) Additionally, comprehensive and long-term treatment is not only cost-effective but is also successful. Research tracking patient outcomes 21 years after receiving treatment showed 10% still met full diagnostic criteria for anorexia nervosa, 21% were partially recovered, and 51% were fully recovered at follow-up (Löwe et al., 2001). Despite long-term treatment success and severe health risks if left untreated, only about 1 in 10 persons with an eating disorder receive treatment. (Noordenbos et al., 2002)

Currently there is limited research examining potential barriers to treatment seeking specifically for anorexia nervosa or for any eating disorder. In 2011, a research study conducted in Australia completed a prospective exploration of treatment seeking behaviors among individuals with bulimic type eating disorders. The aim of the study was to “use a qualitative methodology to investigate the experiences of help-seeking” in a sample of women who had previously not sought treatment for an eating disorder as a part of a 4-year longitudinal study (Evans et al., 2011, p.272). Of the 57 participants the majority reported therapy costs and the amount of time it would take as a barrier to treatment seeking. Others reported a feeling of lack of confidence in their general practitioner’s ability to help them. However, there were those participants who stated that

it was their own personal shame regarding the fact that they had an eating disorder that kept them from publically seeking help services. (Evans et al., 2011). While in this study it appears that pragmatic considerations were most salient, such as time and financial burden, an earlier study's results revealed a much heavier importance placed on fear of stigmatization or shame.

A 2007 study by Hepworth and Paxton focused on extending the current research on treatment seeking in bulimic type eating disorders. They hypothesized that shame with regards to a participant's own bulimic behaviors, as well as fear of change, would be the most often endorsed barrier to treatment seeking. Participants (n=63) were recruited from a community sample and completed the EDE-Q as well as the eating disorder section from the Structural Clinical Interview for DSM-IV (SCID). Additionally, participants completed a semi-structured interview in which they were asked questions about problem recognition, barriers to treatment, if they had ever sought treatment in the past, and if so what was the most influential factor in their treatment seeking behavior. Qualitative analyses of the semi-structured interviews identified "Fear of Stigma" as the most prominent theme for barriers to treatment seeking. The second most commonly occurring theme was "Low Mental Health Literacy/Perception of Need." Their results suggest that public disapproval and self-stigma, for those suffering from bulimic type eating disorders, impede treatment seeking behaviors and support additional research addressing stigma as a potential barrier to treatment seeking for anorexia nervosa or binge eating disorders. (Hepworth & Paxton, 2007).

While research specifically on barriers to treatment seeking for eating disorders is limited, barriers to treatment seeking for mental illnesses in general has been extensively

studied. Several reasons as to why individuals choose to not seek treatment are not wanting to discuss personal information, or not wanting to experience painful feelings (Vogel, Wade, & Haake, 2006). However, the most cited reason as to why people avoid treatment seeking is stigma (Corrigan, 2004). A 1999 report by the U.S. Surgeon General acknowledged fear of stigmatization as barring people from acknowledging their illness, seeking help, or from remaining in treatment until they had received sufficient care (Satcher, 2000).

Stigma as a Barrier to Treatment Seeking for Psychiatric Disorders

In a 2001 article by Link and Phelan, stigma is defined as, “the co-occurrence of its components-labeling, stereotyping, separation, status loss, and discrimination,” (p. 363). They went on to add that in order for stigmatization to occur, power must be exercised over the stigmatized party. Other social psychological models depict stigma as the summation of stereotypes, prejudice, and discrimination (Corrigan, 2004).

Stereotypes may be thought of as automatic process elicited as a means of cognitive efficiency in which an individual makes an often untrue generalization about another person with a particular characteristic (Link & Phelan, 2001). As stereotypes represent publically accepted notions about groups of marked persons, they may be considered “social” (Corrigan, 2004). Corrigan then went on to define prejudice, stating that prejudice requires that an individual not just be aware of a stereotype but that they also endorse that said stereotype. Discrimination is the last step in the summation of stigma and may be thought of as the behavioral response born out of prejudice. (Corrigan, Rafacz, & Rüsch, 2011)

The broad stigma associated with seeking treatment for psychological services is generally that the individual is “undesirable or socially unacceptable,” (Vogel, Wade, & Haake, 2006). Past researchers have then postulated that those who may have psychological concerns choose to hide them and avoid treatment as a means of protecting themselves against harmful stigmatization (Corrigan & Matthews, 2003). This form of stigmatization is often referred to as public stigma. When discussing stigma it is typically public stigma to which one is referring; however, researchers have recently identified a different form of stigma known as self-stigma (Corrigan & Rao, 2012). This is when an individual begins to internalize public opinions and discriminations, and as a result end up endorsing stigmatizing thoughts towards themselves. The discrimination that occurs as a consequence of self-stigma, among other compounding factors, is often that an individual begins to lead a more isolated life, greatly impacting his or her overall quality of life. (Vogel, Wade, & Haake, 2006; Corrigan & Rao, 2012).

A 2006 study conducted by Vogel et al. explored how self-stigma might act as a barrier to treatment seeking when compared to public stigma and self-esteem. The results of this study showed that self-stigma uniquely predicts attitudes towards seeking help for mental illness and willingness to seek help. It is possible that self-stigma acts as a mediator between public stigma and an individual’s decision to seek treatment. They may choose to not seek treatment as a means of avoiding the feelings of shame or loss of self-esteem brought about by public stigma. (Vogel, Wade, & Hackler, 2007) Historically there has been very little research on stigmatization as it relates to eating disorders.

Stigmatization of Eating Disorders

One study assessed the immediate effects of watching the television series *Starved*, a comedic series shown on FX network in the early 2000s whose main characters suffered from varying eating disorders, on the endorsement of stereotypes towards eating disorders (Katterman & Klump, 2010). The aim of the study was to examine the effect of media on negative views of individuals with mental illnesses. Participants were given pre-test stigma endorsement scales, randomly assigned to a control group and an experimental group where they were asked to watch an episode of *Starved* and then were asked to complete a post-test stigma scale. They found no differences between groups on the level of stigma endorsed for eating disorders, however they did replicate previous findings showing high levels of stigma for eating disorders. While this study did attempt to assess the effect of media on stereotypes and stigma, we know from research that stereotypes are systemic, social constructs of which participants would have likely been aware before taking part in the study. (Katterman & Klump, 2010)

An earlier study looked to assess public opinion of eating disorders in the United Kingdom through two nationwide surveys conducted in 1998 and 2003 (Crisp, 2005). Participants were randomly selected adults living in England, Scotland or Wales. They were asked to complete a survey on public opinions concerning people with mental illness. Participants were given a list of negative stereotypes related to various mental illnesses including eating disorders and were then asked to state the degree to which they agreed with the statement. The results showed that the public found individuals with eating disorders hard to talk to, that they feel different from those with eating disorders, and that treatment would not help. More than one third of the lay respondents believed

that individuals with eating disorders could pull themselves together and had themselves to blame. However, this research was methodologically flawed. Participants were only given prescribed negative attributes and were not encouraged to identify either more empathic positions or novel stereotypes not yet identified to the researchers. There is also no mention as to how the negative attributes for the current study were chosen. The results from the study should therefore be interpreted with caution. (Crisp, 2005). These studies provide very limited research on the topic of stigma of eating disorders and make no attempt to functionally assess how stigma operates against treatment seeking behaviors.

More recent studies have examined stigma towards anorexia nervosa in both the general public and in college students. A 2006 study by Stewart, Keel and Schiavo looking at current perceptions about individuals with anorexia nervosa. Participants (N=91) were recruited from two large cities on the east coast and were asked to think about individuals with anorexia nervosa, schizophrenia, asthma, and an individual with no medical problems, and were given a brief description of each of the illnesses. They were then asked to complete a questionnaire assessing perceived personal characteristics in addition to a measure gauging anticipated reaction to personal interaction with the hypothetical individual. Both scales were presented as a Likert scale. Their results supported those found in the Crisp 2005 study that those with anorexia nervosa are difficult to talk to, could pull themselves together, and are to blame for their condition. However, like the Crisp study, they also confined their participants to prescribed stereotypes without any mention as to how these were chosen. (Stewart, Keel, & Schiavo, 2006) It is impossible to know what is most readily brought to mind when participants

are asked to think of someone with anorexia nervosa if they are not given the freedom to answer naturally.

A later study conducted by members of the same research team, recreated their previous findings. Stewart, Schiavo, Herzog, and Franko (2008) recruited eighty female participants from a university and asked them to read four vignettes of a woman with either depression, anorexia nervosa, schizophrenia, or mononucleosis. Participants were then asked to complete a variety of measures created to assess stereotypes, prejudice, discrimination, and contact. They found an increased prejudice towards anorexia nervosa over the other groups, as well as a bias towards thinking that anorexia nervosa is more prevalent than schizophrenia. (Stewart, Schiavo, Herzog, & Franko, 2008)

While the majority of past research has focused only on anorexia nervosa or bulimia nervosa, a 2013 article by Ebnetter, Psych, and Latner, explored stigmatizing attitudes across anorexia nervosa, bulimia nervosa, binge eating disorder, obesity, and major depressive disorder. They hypothesized that participants would endorse greater stigmatizing attitudes towards individuals with bulimia nervosa, binge eating disorder, and obesity than they would towards anorexia nervosa or major depressive disorder. Participants received vignettes for each of the conditions and were then asked to complete a stigma scale, a measure on lack of self-discipline, and a brief form of the Marlow-Crowne Social Desirability Scale (Fisher, 1967). They found that in this student population, stigmatizing attitudes were largely not prominent. However, they did find that the participants believed that individuals with eating disorders were more to blame for their disorder than the individual with major depressive disorder. Additionally, they also

found that participants believed that binge eating disorder is more within an individual's control than either anorexia nervosa or bulimia nervosa.

Stigmatization Mediated by Etiological Understanding

A recent study explored perceptions of individuals with anorexia nervosa and bulimia nervosa (Wingfield, Kelly, Serdar, Shivy, & Mazzeo, 2011). Researchers hypothesized that when participants were given a vignette in which the hypothetical individual was described as having an eating disorder with biological etiologies they would then be less likely to endorse stigmatizing statements. Additionally, if participants had contact with an individual with an eating disorder they would also be less likely to agree with stigmatizing statements. Participants (n=275) were all college students from a public university in the southeastern United States. They were given 16 different vignettes with fictional characters displaying signs of either anorexia nervosa or bulimia nervosa. Participants were then asked to assess the characters' likeability, responsibility for their eating disorder, similarity to participant, sexual orientation, ease of recovery, self-control, and self-destructiveness on a scale ranging from strongly disagree to strongly agree.

They found that when participants were given a vignette that highlighted biological etiologies, participants were more likely to state that the individuals were least responsible for their condition, least likely to recover, and the least self destructive. They also illustrated differing opinions regarding individuals with bulimia nervosa verses anorexia nervosa. Those with bulimia nervosa were seen as more responsible for their condition and more self-destructive. Individuals with anorexia nervosa were seen as having more self-control. Despite expanding the possible range of stereotypes to include

etiology, this study is also constrained by the fact that participants were not able to give their unbiased opinions about individuals with eating disorders. (Wingfield, Kelly, Serdar, Shivy, & Mazzeo, 2011) Past research has been founded on studies that only allowed participants to respond within limitations set by the researchers. There has yet to be a study examining said stereotypes when participants are allowed to describe the characteristics of individuals with anorexia nervosa without restrictions.

Statement of Problem

There is a great need for current research that will paint a more accurate landscape of the stigmatization against those with eating disorders and how it may or may not impede treatment seeking. In order to correctly understand stigma it is first necessary to grasp the components of stigma, beginning with stereotypes. It is the primary aim of the current study to collect qualitative responses from participants as a means of systematically identifying potential stereotype domains within anorexia nervosa without biasing participant responses through response limitations. Once stereotype domains are identified, they will be transformed into a quantitative questionnaire and administered to a second wave of participants. Level of participant awareness and history with individuals with eating disorders will also be assessed. In the first part of the current study it is hypothesized that 1) Coding of the responses will reflect an awareness of the multidimensional nature of the condition, 2) Approximately 25% of respondents will respond in a manner consistent with “globally negative” perceptions which reflect probably stigmatization, and after qualitative responses are collected, it is hypothesized in study two that 3) a psychologically sound measure will be developed from the most commonly occurring themes and reflect the diverse perspectives that participants held,

and lastly 5) Factor scores on the resulting factors will differ as a function of respondent gender and personal experience with eating disorders. In order to best address these hypotheses, the current study will be split into two distinct phases, “Study 1” and “Study 2.” “Study 1” will focus on the collection of qualitative data through free response prompts, and “Study 2” will include the formation of a new questionnaire based on the data collected in study one as well as the administration of the new questionnaire to a unique set of participants. It is anticipated that the newly identified stereotype domains will contribute a missing and fundamental link in understanding current public perceptions of anorexia nervosa.

Study 1

Methods

Participants

Participants consisted of emerging adults recruited in a single semester through a combined undergraduate and graduate psychology course at the University of Wisconsin-Milwaukee. The current study was a subset of a larger online study, and not all participants originally recruited completed the eating disorder subsection of the study. Table 1 shows the original number of participants recruited to complete the larger survey, and the final number of participants that took part in the eating disorder questionnaire. The mean age of the final sample in Study 1 (N=621, 43% female) was 21.38. In Study 1 79% were Caucasian, 6% African American, 4% Asian, 5% Hispanic; 6% were of other ethnicities. Table 1 shows a more detailed account of participants’ demographic

information for each study. Emerging adults were required to be between the ages of 18 and 24 and be English speaking.

Participants were asked to take part in an online survey by students currently enrolled in an undergraduate psychology course as a means of helping them satisfy a course requirement. Each student was asked to recruit eight emerging adult participants over the course of the semester. Alternate assignments were made available to students who were not able to recruit participants to meet this course requirement.

Procedure

Once participants were recruited they were given information on how to access a secure online survey at [surveymonkey.com](https://www.surveymonkey.com). At the welcome page of the survey, participants documented their consent after reviewing the informed consent displayed to them and confirming that they were over the age of 18, and were completing the survey voluntarily. Participants were then asked to complete basic demographic questionnaires and were asked about their perceptions of individuals with anorexia nervosa. The study was approved by the IRB at the University of Wisconsin-Milwaukee.

Measures

The data used for this study are a part of a larger online survey. Only measures pertaining to the variables of interest will be utilized during this investigation.

Demographic Questionnaire. Participants were asked about a variety of demographic variables such as their gender, current age, whether they were currently a student, if they lived with one or both of their parents, years of education, race/ethnicity, marital status, and whether they have children.

Qualitative Perceptions of Anorexia Nervosa. Participants were shown the following introduction: “We are interested in your perceptions of people with different eating disorders. For each question below, please give us your first thoughts regarding the characteristics of people with each of these conditions.” They were then prompted, “Tell us what characteristics you think of when you think of someone with anorexia.”

Participants were given a large blank text box to type their responses.

Eating Disorder History and Awareness. After completing the qualitative perceptions measure, participants were asked several questions aimed at assessing participants’ awareness of and experience with eating disorders. First, participants were asked if they have ever been formally diagnosed with an eating disorder in the past and to identify which disorder(s). They were also asked if they’ve ever been worried that they might have an eating disorder, and if so which one(s). Last they were asked if they have any friends or family members who currently have or previously have had an eating disorder.

Data Coding and Analysis

All data collected was analyzed using the Delphi method of qualitative coding (Dawson & Brucker, 2001). A team of researchers consisting of several undergraduate research assistants, a graduate student, and a clinical psychology professor adhered to the Delphi method in categorizing all qualitative responses collected. Upon receiving the complete set of raw, qualitative, data members of the coding team were required to individually examine the entire set for thematic codes within the responses as to not be biased by other team members’ interpretations. The coding team then reconvened and discussed and agreed upon specific themes found throughout the data set.

Once themes were agreed upon, the coding team collectively assigned specific codes to identify themes within the raw data set. Codes were defined given their context, and discussed extensively so that every researcher had the same understanding of the factor. Codes encapsulated broad themes within the data and included the codes Physical Appearance, Behavior, Global. Determined/Controlled, Self-esteem/Self-image, Interpersonal, Anxiety, Depression, Mood Instability, Unspecified Mental Health, and Other. An example of a code definition that would have been supplied to the coding team would be “Interpersonal: This is going to include anything that describes how people with anorexia nervosa interact with others. Ex: Shy, closed off, lonely, liar, honest, etc.” (See Table 2 for complete definitions) One participant’s response that received majority agreement for Interpersonal was “Nervous Loner Angry” Responses were allowed to receive as many codes as necessary to completely capture all themes within each response. Researchers individually coded the entire data set once all themes and codes were assembled. The research team then reconvened and discussed each item, striving for consensus.

Once coding of the data set was complete, the data set was analyzed for agreement, frequency, and frequency distribution of specific codes. Any code receiving majority agreement was matched to the original response number in the raw data and examined individually to determine commonly occurring responses for the purposes of creating a quantitative scale measuring perceptions of anorexia nervosa. For example, of the responses that received majority agreement for “depression”, “depressed” was one of the most commonly occurring answers, opposed to “sad”, “blue”, “unhappy”, and was chosen to represent this theme within the quantitative questionnaire.

Results

During the qualitative coding, a code was assigned to each response when the majority of coders agreed that it applied. Table 3 shows the modal agreement score for each code, the frequency of majority agreement for each code in relation to the entire dataset, as well as percentage agreement among raters during coding.

Within the coding, when majority levels of agreement were obtained for each code, Physical Appearance was cited by 90% of responses, Self-esteem/Self-image (87%), Depression (85%), Behavior (76%), Anxiety (67%), Determined/Control (63%), Interpersonal (62%), Global (39%) Unspecified Mental Health (37%), Mood Instability (30%), and Other (4%). The variance among the thematic codes reflects participants' understanding of the multidimensional nature of anorexia nervosa.

Study 2

Methods

Participants

Participants consisted of emerging adults recruited through a combined undergraduate and graduate psychology course at the University of Wisconsin-Milwaukee over two semesters. The current study was a subset of a larger online study, and not all participants originally recruited completed the eating disorder subsection of the study. The mean age of the final sample in Study 2 (N=777, 55% female) was 21.82 years for emerging adults. In Study 2 80% were Caucasian, 5% African American, 4% Asian, 7% Hispanic; 6% were of other ethnicities. Table 1 shows a more detailed account

of participants' demographic information for each study. Emerging adults were required to be between the ages of 18 and 24 and be English speaking.

Participants were asked to take part in an online survey by students currently enrolled in an undergraduate psychology course as a means of helping them satisfy a course requirement. Each student was asked to recruit eight emerging adult participants over the course of the semester. Alternate assignments were made available to students who were not able to recruit participants to meet this course requirement.

Procedure

Once participants were recruited they were given information on how to access a secure online survey at [surveymonkey.com](https://www.surveymonkey.com). At the welcome page of the survey, participants documented their consent after reviewing the informed consent displayed to them and confirming that they were over the age of 18, and were completing the survey voluntarily. Participants were then reminded that they reserved the right to stop the survey at any point during the survey for any reason, and that they may omit questions they do not wish to answer. Once participants agreed to all necessary consent forms, they were asked to complete basic demographic questionnaires as well as perceptions of anorexia nervosa. The study was approved by the IRB at the University of Wisconsin-Milwaukee.

Measures

The data used for this study are a part of a larger online survey. Only measures pertaining to the variables of interest will be utilized during this investigation.

Demographic Questionnaire. Participants were asked to specify a variety of demographic questions such as their gender, current age, whether they were currently a student, if they

lived with one of both of their parents, years of education, race/ethnicity, marital status, and whether they had children.

Quantitative Perceptions of Anorexia Nervosa. . The most frequently occurring codes derived from “Study 1” qualitative responses were identified and compiled into a 30-item, multidimensional questionnaire (See Table 5). After consenting to participate and completing the demographic questionnaire participants were shown the following introduction, “We are interested in your perceptions of people with anorexia. Please read the following descriptions and indicate how closely they match your sense of the typical person with anorexia.” They were then shown 30-items and asked to rate how strongly they agreed with the statement on a five-point scale ranging from “Strongly Disagree” to “Strongly Agree.” An example of the type of statement a participant would be presented with is “People with anorexia have distorted body image.”

Eating Disorder Awareness. After completing the quantitative perceptions measure, participants were asked several questions aimed at assessing the participants’ awareness of and history with eating disorders. First, participants were asked if they have ever been formally diagnosed with an eating disorder in the past. They were also asked if they’ve ever been worried that they might have an eating disorder, and if so which one(s). Last, they were asked if they have any friends or family members who have or have had an eating disorder.

Data Analyses

Factor Analysis. Exploratory factor analysis was conducted on the quantitative perceptions of anorexia nervosa questionnaire to identify factors among the items.

Factors were extracted using a Principal Components analysis based on the number of

factors with eigen values greater than 1. A Promax rotation was used. Internal consistencies were evaluated for each factor using the alpha statistic. Factor scores were obtained by summing the items on each factor, and then dividing by the number of items on that factor. This yields scores that can be interpreted in relation to the original Likert scale and compared directly across factors.

Group Comparisons. The mean score for each factor was compared to determine the relative perceived frequency of each type of perception. The relationship between specific factor scores and participant gender and eating disorder history was evaluated using t-tests.

Results

In study 2, the goal was to develop a psychometrically sound quantitative questionnaire to assess individuals' perceptions of those with anorexia nervosa. Exploratory factor analysis was conducted on the 30 items that comprised the questionnaire to determine the underlying factor structure. Examining factors with eigen values greater than 1 initially suggested a 7 factor solution accounting for 59.7% of the variance. A Promax rotation was used to obtain the final solution. The five factors with sufficient internal consistency were Global Negative ($\alpha = .889$), Psychopathology ($\alpha = .718$), Positive Characteristics ($\alpha = .686$), Determination ($\alpha = .733$), Affluent Background ($\alpha = .677$). However, 2 of the factors showed inadequate internal consistency reliability. See Table 4 for a complete breakdown of factor analysis by questionnaire item.

When examining the intercorrelations between the five factors, Global Negative and Psychopathology were positively, and significantly correlated ($r = .129$, $p < .001$), Positive Characteristics and Determination were positively and significantly correlated

($r=.464$, $p<.001$), Global Negative and Affluent Background were positively correlated ($r=.335$, $p<.001$), and finally Determination and Affluent Background were positively correlated ($r=.080$, $p<.05$). There also existed significant negative correlations between factors. Global Negative and Positive Characteristics ($r=-.414$, $p<.001$), Psychopathology and Positive Characteristics ($r=-.263$, $p<.001$), and lastly Global Negative and Determination ($r=-.150$, $p<.001$) were all significantly correlated with each other.

In order to directly compare the relative order of most highly endorsed factors, the mean score of all items in each factor were added and then divided by the number items per factor. Overall, Psychopathology was the most highly agreed upon factor ($M=3.77$, $SD=0.59$). Following Psychopathology, Determination ($M=3.14$, $SD=0.76$), Affluent Background ($M=2.72$, $SD=0.58$), Positive Characteristics ($M=2.67$, $SD=0.59$), and lastly Global Negative ($M=2.62$, $SD=0.75$). Group differences in perceptions of anorexia nervosa were observed for both gender and participants' eating disorder history.

Males endorsed significantly more Globally Negative statements than females $t(763)=7.71$, $p<.001$, as well as more Affluent Background items $t(762)=2.97$, $p<.003$. Females endorsed significantly more items addressing Psychopathology $t(768)=3.60$, $p<.001$, Positive Characteristics $t(768)=4.93$, $p<.001$, and Determination $t(768)=4.83$, $p<.001$. (See Table 6)

Due to the very low numbers of respondents who reported having been diagnosed with any eating disorder, these respondents were grouped together, and their scores on the Anorexia Perceptions Scale were compared to the rest of the sample (see Table 7). Participants with any diagnosis endorsed fewer items on the Global Negative factor $t(769)=2.98$, $p<.003$, more Positive Characteristics $t(769)=4.36$, $p<.001$, and more

Determination $t(769) = 3.56, p < .001$. Similar patterns were observed if a participant had ever been worried that they may have had an eating disorder, whether or not they had actually received a diagnosis (see Table 8). These respondents differed from the rest of the sample in scoring lower on Globally Negative, higher on Psychopathology, higher on Positive Characteristics, and higher on Determination.

Finally, the scores of respondents who reported a friend or family member with an eating disorder were compared to the rest of the sample. (See Table 9) If participants had a history of a family or friend diagnosed with an eating disorder they scored lower on Global Negative, and higher on Psychopathology, Positive Characteristics, and Determination. Scores on the Affluent Background factor were not significantly different across groups.

Discussion

The present study contributes a fundamental link in the understanding of stigmatizing attitudes towards anorexia nervosa in several ways. Across multiple samples, the current study showed that emerging adult populations have a keen awareness of the multidimensionality of anorexia nervosa as assessed through both free-response and quantitative scales that had not previously been observed. Within Study 1, where participants were allowed to answer naturally what they believed the most salient characteristics of an individual with anorexia nervosa were, responses ranged from diagnostically accurate physical and behavioral descriptions to more nuanced responses acknowledging highly comorbid disorders such as depression and anxiety. Despite the original hypothesis that approximately 25% of respondents would respond in

a manner consistent with globally negative descriptions, only 11% of the responses reached majority agreement to be considered globally negative. Furthermore, in the second wave of coding in which physical and behavioral descriptions were omitted from the sample, only 14% of the responses mentioned determination, control, or will power. The overall low levels of globally negative and determination statements within this emerging adult population supports those found in Ebner & Latner (2013) whose demographics were similar to those in this study, and are found in contrast to the nationwide survey results in Crisp (2005).

From the data collected in Study 1, a psychometrically sound measure assessing attitudes towards anorexia nervosa was developed. Unlike previous research, this scale contains both positive and negative characteristics regarding individuals with anorexia nervosa and was derived directly from past participants' opinions rather than researchers' speculation. The results of this questionnaire support those collected in Study 1 and suggest that emerging adults are more likely to see individuals with anorexia nervosa as being more likely to have comorbid psychopathology, have strong determination, and come from an affluent background. Interestingly Positive Characteristics and Global Negatives were the least highly endorsed, suggesting that participants were unwilling to make overly extreme comments, positive or negative.

Unlike previous research, this study was the first to allow participants to naturally respond and identify potential stereotype domains with regards to anorexia nervosa. While a small sect of participants did respond in a globally negative manner, or chose to focus on an individual with anorexia nervosa's willpower, the majority of the participants highlighted a person with anorexia nervosa's self-esteem or self-image, his or her

interpersonal style, anxiety, or depression. These domains, while seemingly self-evident, were overlooked in past research examining stigmatizing attitudes towards anorexia nervosa. In previous research, it was more likely that the scales were developed with responses more consistent with globally negative statements or will power, such as “they could pull themselves together” or “they are weird”, and such statements were given prominence. However, we can now see that these stigmatizing attitudes, while still present to a certain degree, do not support the majority of participants’ opinions and likely overestimated the prevalence of these thoughts when used in research.

Future research, examining how stigma may impede treatment seeking for anorexia nervosa, would benefit from integrating the stereotype domains identified in this study into their work. Utilizing more updated stereotype domains into future work would allow researchers to more accurately assess what true barriers to treatment seeking exist without forcing participant response. Additionally, with the availability of publically endorsed stereotypes, researchers now have the ability to determine whether a discrepancy between public stigma and self-stigma exists within the population. Vogel (2006) stated that self-stigma uniquely predicts an individual’s willingness to seek treatment. If there did exist a discrepancy between the opinions of the public and those individuals who have anorexia nervosa, that would have potential to be a very powerful point of intervention.

The current study does have several limitations and would benefit from replication. The first, and perhaps most notable limitation is that of the participant population. Participants in the current study were predominantly Caucasian, single never having been married, with higher education. There were also very few participants who had themselves been diagnosed with an eating disorder, below what is known the base rate in

the emerging adult population. As a requirement for the current study participants were also restricted to be between the ages of 18-24. While this age range is narrow, it still is of value in that participants of this age are close in age to the average age of onset for anorexia nervosa. They are more likely than significantly older participants to be interacting with individuals with anorexia nervosa. However, the current demographic profile of participants limits the generalizability of the results. Future research should strive to replicate the current study with a more varied participant population, particularly as it applies to race and age.

Additional limitations include the relative weakness of certain factors on the quantitative scale. Positive Characteristics and Affluent Background both displayed alphas slightly less than .7 which is traditionally deemed acceptable. However, for the purposes of this study the remaining factors remained in the study as they represented the most frequently occurring codes from Study 1. Despite the aforementioned limitations the current study provides an essential foundation to the understanding of stigma towards eating disorders.

Table 1
Demographic Characteristics of Participants

	Study 1 (n=621)	Study 2 (n=777)
Gender		
Female	57%	55%
Male	43%	45%
Age	M=21.38	M=21.82
Education	M=14.13	M=14.40
Student		
No	25%	37%
High School	2%	1%
Part Time	8%	8%
Full Time	65%	54%
Live with Parents	38%	33%
Ethnicity		
African-American	6%	5%
Asian	4%	4%
Caucasian	79%	80%
Hispanic	5%	7%
Native American	<1%	<1%
Pacific Islander	<1%	<1%
Mixed	4%	4%
Marital Status		
Single, never married	96%	92%
Married	4%	6%
Divorced	<1%	1%
Widowed	n/a	1%
Has Children	5%	8%

Code Definitions

Physical Appearance	Any mention to how the participant looks. Ex: skinny, fat, skin and bones, thin hair etc.
Behavior	Readily observable behaviors. Ex: Doesn't eat, works out a lot, takes time eating in front of others
Global	Very broad statement that encompasses the individual as a whole Ex: Weird, strange, sick, weak, stupid
Determined/Controlled	Any comment that mentions determination, control, will-power, etc.
Self-Esteem/Self-Image	How the individual with anorexia nervosa sees him or herself
Interpersonal	How person with anorexia nervosa interact with others Ex: shy, closed off, lonely, liar, honest
Anxiety	Any comment related to anxiety including OCD, fear, scared, etc
Depression	Comments about the person being depressed, sad, unhappy, blue
Mood Instability	General emotional reactivity Ex: mood swings, unstable, moody
Unspecified Mental Health	Generic statements about "mental health issues"
Other	For whatever responses that do not map onto the other categories and should be used sparingly.

Table 3

Qualitative Agreement and Frequencies

	Modal Agreement	Frequency of Agreement	Percentage Agreement
Physical Appearance	4	192	90%
Behavior	4	171	76%
Global	1	74	39%
Determined/Controlled	4	37	63%
Self-Esteem/Self-Image	4	128	87%
Interpersonal	4	54	62%
Anxiety	4	47	67%
Depression	4	82	85%
Mood Instability	1	19	30%
Unspecified Mental Health	1	11	37%
Other	1	1	4%

Table 4

Factor Structure of Perceptions of Anorexia Scale

Factor Loading	Item Number	Item Content
Global Negative (alpha =.889)		
0.842	26	Disgusting
0.83	29	Loser
0.816	10	Gross
0.806	19	Weird
0.775	22	Strange
0.727	4	Stupid
0.527	16	Seeking Attention
Psychopathology (alpha=.718)		
0.76	15	Depressed
0.715	12	Anxious
0.689	3	Underlying Family Problems
0.662	24	Low Self-Esteem
Positive Characteristics (alpha =.686)		
0.681	1	Strong
0.667	5	High-Achieving
0.641	7	Intelligent
0.601	13	Beautiful
0.539	20	In Control
Determination (alpha=.733)		
0.806	27	Dedicated
0.791	21	Determined
0.594	17	Strong Will-Power
Affluent Background (alpha=.677)		
0.756	18	Rich
0.739	23	Come from Privilege

Table 5

Perceptions of Anorexia Scale

Prompt	We are interested in your perceptions of people with anorexia. Please read the following descriptions and indicate how closely they match your sense of the typical person with anorexia.
	People with anorexia:
Q1.	Are strong
Q2.	Have a restrictive diet
Q3.	Have underlying family problems
Q4.	Are stupid
Q5.	Are high-achieving
Q6.	Are self-conscious
Q7.	Are intelligent
Q8.	Over-exercise
Q9.	Are popular
Q10.	Are gross
Q11.	Have distorted body image
Q12.	Are anxious
Q13.	Are beautiful
Q14.	Do extreme dieting
Q15.	Are depressed
Q16.	Are seeking attention
Q17.	Have strong will-power
Q18.	Are rich
Q19.	Are weird
Q20.	Are in control
Q21.	Are determined
Q22.	Are strange
Q23.	Come from privilege
Q24.	Have low self-esteem
Q25.	Are envied by others
Q26.	Are disgusting

- Q27. Are dedicated
 Q28. Are stubborn
 Q29. Are losers
 Q30. Are lucky

Table 6
Gender

	Female (n=425)		Male (n=345)		t	df	p
	M	sd	M	sd			
Global Negative	2.44	.76	2.83	.67	7.71	763	.001**
Psychopathology	3.83	.57	3.68	.59	3.60	768	.001**
Positive Chars	2.77	.57	2.56	.59	4.93	768	.001**
Determination	3.26	.75	2.99	.76	4.83	768	.001**
Affluent	2.66	.61	2.78	.54	2.97	762	.003**

Note. *p<.05. ** p<.01

Table 7
History of Diagnosis

	Any Dx (n=27)		No Dx (n=744)		t	df	p
	M	sd	M	sd			
Global Negative	2.20	.63	2.63	.74	2.98	769	.003**
Psychopathology	3.86	.77	3.76	.58	0.68	27	.505
Positive Chars	3.14	.69	2.65	.57	4.36	769	.001**
Determination	3.64	.84	3.11	.75	3.56	769	.001**
Affluent	2.74	.64	2.71	.58	0.24	769	.809

Note. *p<.05. ** p<.01

Table 8
Worried about Eating Disorder

	Any Worry (n=89)		No Worry (n=679)		t	df	p
	M	sd	M	sd			
Global Negative	2.25	.75	2.66	.73	4.94	766	.001**
Psychopathology	3.88	.58	3.75	.59	1.99	766	.047*
Positive Chars	2.96	.62	2.63	.57	4.98	766	.001**
Determination	3.48	.78	3.09	.75	4.53	766	.001**
Affluent	2.62	.62	2.72	.58	1.61	766	.107

Note. *p<.05. ** p<.01

Table 9
Family or Friend with Eating Disorder

	Any ED (n=227)		No F/F (n=543)		t	df	p
	M	sd	M	sd			
Global Negative	2.38	.77	2.71	.71	5.65	394	.001**
Psychopathology	3.90	.57	3.71	.59	4.04	768	.001**
Positive Chars	2.74	.63	2.64	.57	2.18	768	.030*
Determination	3.27	.81	3.08	.74	3.08	390	.002**
Affluent	2.67	.62	2.73	.56	1.34	390	.180

Note. *p<.05. ** p<.01

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